



.DUKE UNIVERSITY MEDICAL CENTER

CURRICULUM VITAE

**for
Permanent record
and the
Appointments and Promotions Committee**

Date revised: August 1, 2003

(Use continuation pages when necessary.)

Name (complete with degrees): Mitchell W. Krucoff, M.D., F.A.C.C., F.C.C.P.

Primary academic appointment (department): Department of Medicine/Cardiology

Secondary appointment (if any) - (department):

Social Security number:

Present academic rank and title (if any): Associate Professor of Medicine with Academic Tenure

Date and rank of first Duke Faculty appointment: October, 1988, Assistant Professor of Medicine

Medical licensure (National Boards, State): NC State License

Specialty certification and dates: Internal Medicine
Cardiology

Date of birth: **Place:** Washington, D.C.

Citizen of:

Education:	Place	Date	Degree
High School:	Woodrow Wilson		High School Diploma
College:	Yale University		BA, Magna Cum Laude
Graduate or Professional School	George Washington Univ.		MD, AOA Honor Society

Scholarly societies (Alpha Omega Alpha, Sigma Xi, Phi Beta Kappa, etc.):

Alpha Omega Alpha

Professional training and academic career (place, inclusive dates, title - chronologically commencing with first Postdoctoral position):

George Washington University		Internal Medicine, Residency
Georgetown University		Fellow in Cardiology - Chief Fellow, Cardiology
Georgetown University	1985 - 1988	Cardiology Faculty - Director, Cardiovascular ICU - Director, Ischemia Monitoring Laboratory - Assistant Director, Cardiac Cath Lab
Duke University Med. Center	1988 - Present	Cardiology Faculty

- Director, Ischemia Monitoring Laboratory
- Senior Staff, ICC Laboratory
- Director, Cardiovascular Lab, VAMC
- Cardiovascular Advisory Board, DCRI
- Director, Interventional Devices Clinical Trials, DCRI

Publications: (Do not include submitted papers or papers in preparation. List separately those papers in press.)

1. Refereed journals: (Refereed journals are scientific publication that have active editorial boards and a system of critical review of all submissions for publication.)

1. Krucoff MW, Green CE, Satler LF, Miller FC, Pallas RS, Kent KM, Del Negro AA, Pearle DL, Fletcher RD, Rackley CE. Noninvasive detection of coronary artery patency using continuous ST segment monitoring. *Am J Cardiol* 1986;57:916-922.
2. Miller FC, Krucoff MW, Satler LF, Green CE, Fletcher RD, Del Negro AA, Pearle DL, Kent KM, Rackley CE. Ventricular arrhythmias during reperfusion. *Am Heart J* 1986;112:928-932.
3. Bottner RK, Morea CJ, Green CR, Renzi RH, Kent KM, Krucoff MW. "Quantitation of ischemia during total coronary occlusion with computer-assisted high resolution ST segment monitoring": effect of collateral flow. *J Electrocard* 1987;20(suppl):104-106.
4. Krucoff MW, Pope JE, Bottner RK, Renzi RH, Wagner GS, Kent KM. Computer-assisted ST-segment monitoring: experience during and after brief coronary occlusion. *J Electrocard* 1987;20(suppl):15-21.
5. Krucoff MW. "Identification of high risk patients with silent myocardial ischemia after percutaneous transluminal coronary angioplasty by multi-lead monitoring". *Am J Cardiol* 1988;61:29F-34F.
6. Krucoff MW. "Poor performance of lead V5 in Single- and dual-channel ST-segment monitoring during coronary occlusion." *J Electrocard* 1988;21(suppl):30-34.
7. Krucoff MW, Parente AR, Bottner RK, Renzi RH, Stark KS, Shugoll RA, Ahmed SW, Stroming SL, Green CE, Rackley CE, Kent KM. "Stability of multi-lead ST segment "fingerprints" over time following angioplasty: A new approach to noninvasive detection of reocclusion." *Am J Cardiol* 1988;61:1232-1237.
8. Renzi RH, Bottner RK, Stroming SL, Parente AP, Shugoll RA, Stark KS, Dimichele J, Jackson YR, Kent KM, Krucoff MW. "Quantitative ST-segment recovery following angiographically successful angioplasty: A useful warning of early complications". *J Electrocard* 1988;21(suppl):S27-S29.
9. Wagner NB, Sevilla DC, Krucoff MW, Lee KL, Pieper KS, Kent KM, Bottner RK, Selvester RH, Wagner GS. "Transient alterations of the QRS complex and the ST segment during balloon angioplasty of the left anterior descending artery." *Am J Cardiol* 1988;62:1038-1042.
10. Pilato MA, Fleming NW, Katz NM, O'Connell JJ, Krucoff MW, Siegelman RE, Kim YD: Treatment of non-cardiogenic pulmonary edema following cardiopulmonary bypass with veno-venous extracorporeal membrane oxygenation. *Anesthesiology* 1988;69(4):609-614.
11. Mirvis DM, Berson AS, Goldberger AL, Green LS, Heger JJ, Hinohara T, Insel J, Krucoff MW, Moncrief A, Selvester RH, Wagner GS. Instrumentation and practice standards for electrocardiographic monitoring in special care units. A Report for Health Professionals by a Task Force of the Council on Clinical Cardiology, American Heart Association. *Circulation* 1989;79:464-471.
12. Wagner NB, Sevilla DC, Krucoff MW, Pieper KS, Lee KL, White RD, Kent KM, Renzi R, Selvester RH, Wagner GS. Transient alterations of the QRS Complex and ST segment during percutaneous transluminal balloon angioplasty of the right and left circumflex coronary arteries. *Am J Cardiol* 1989;63:1208-1213.
13. Schaer GL, Krucoff MW, Green C, Visner MS. "Dissociation of ST segment elevation and regional wall motion with open-artery, intracoronary fluosol." *Am Heart J* 1989;118:679-85.
14. Krucoff MW: Electrocardiographic monitoring and coronary occlusion; fingerprint pattern analysis in dimensions of space, time, and mind. *J Electrocard* 1989;22(suppl):232-7.

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15. Krucoff MW, Croll MA, Pendley LP, Burdette DL, Pope JE, Hutchinson DD, Stone JS, Weber RA, Califf RM: Continuous computer-assisted electrocardiographic monitoring in patients with acute myocardial infarction: Early experience. *Computers In Cardiol* 1989;197-200.
 16. Stark KS, Satler LF, Krucoff MW, Rackley CE, Kent KM. Myocardial salvage after failed coronary angioplasty. *J Am Col Card* 1990;15(1):78-82.
 17. Kent KM, Cleman MW, Cowley MJ, Forman MB, Jaffe CC, Kaplan M, King SB, Krucoff MW, Lassar T, McAuley B, Smith R, Wisdom C, Wohlgelemler D. Reduction of myocardial ischemia during percutaneous transluminal coronary angioplasty with oxygenated fluosol. *Am J Cardiol* 1990;66:279-284.
 18. Krucoff MW, Wagner NB, Pope JE, Mortara DM, Jackson YR, Bottner RK, Wagner GS, Kent KM: The portable programmable microprocessor-driven real-time 12-lead electrocardiographic monitor: A preliminary report of a new device for the noninvasive detection of successful reperfusion or silent coronary reocclusion. *Am J Cardiol* 1990;65:143-8.
 19. Krucoff MW, Jackson YR, Kehoe MK, Kent KM. Quantitative and qualitative ST segment monitoring during and after percutaneous transluminal coronary angioplasty. *Circulation* 1990;81(suppl IV):IV-20-IV-26.
 20. Wagner NB, Elias WJ, Krucoff MW, Sevilla DC, Jackson YR, Kent KK, Wagner GS. Transient electrocardiographic changes of elective coronary angioplasty compared with evolutionary changes of subsequent acute myocardial infarction observed with continuous three-lead monitoring. *Am J Cardiol* 1990;66:1509-12.
 21. Krucoff MW, Croll MA, Pope JE, Granger CB, Pieper KS, Sigmon KN, Lee KL, Califf RM: Heuristic and logistic principles of ST-segment interpretation in the time domain, evolution in the context of the TAMI 7 trial design. *J Electrocard* 1990; 23 (suppl):6-10.
 22. Krucoff MW, Smith JE, Jackman Jr JD, Croll MA, Phillips HR, Stack R: "Hugging Balloons" Through a single 8-French guide: salvage angioplasty with lytic therapy in the infarct vessel of a 40-year-old man. *Catheterization and Cardiovascular Diagnosis* 1991;24:45-50.
 23. Krucoff MW, Higginbotham MB, Van Trigt P, Sawchak, ST, Jones RH, Wall TC, Phillips HR, Stack RS, Reeves JG: From HIRMIT* to the Cape May Lighthouse. *North Carolina Med J* 1991;52:12:618-620.
 24. Davidson CJ, Sheikh KH, Kisslo KB, Phillips HR, Peter RH, Behar VS, Kong Y, Krucoff MW, Ohman EM, Tcheng JE, Stack RS. Intracoronary ultrasound evaluation of interventional technologies. *Am J Cardiol* 1991; 68:1305-1309.
 25. Stark KS, Krucoff MW, Schryver B, Kent KM: Quantification of ST-segment changes during coronary angioplasty in patients with left bundle Branch block. *Am J Cardiol* 1991:1219-1222.
 26. Muhlestein JB, Quigley PJ, Ohman EM, Bauman RP, Sketch, Jr. MH, Tcheng JE, Davidson CJ, Peter RH, Behar VS, Krucoff MW, Kong Y, Phillips HR. Prospective analysis of possible myocardial damage or hemolysis occurring as a result of prolonged autoperfusion angioplasty in humans. *J Am Col Cardiol* 1992;20(3):594-8.
 27. Krucoff MW, Croll M, Pope J, Ryan J, Pieper K, Sawchak S, Wagner B, Crater SW, Califf R. Unstable infarct artery. Quantification across angiographic subgroups using continuous digital 12-lead ST-segment recovery analysis. *J Electrocard* 1992;24(suppl):15.
 28. Krucoff MW, Jackman JD, Crater SW, Sawchak ST, Curtis GJ, Phillips HR. "Over the shoulder" guidewire manipulation through an angulated stenosis adjacent to a coronary aneurysm during high risk percutaneous transluminal angioplasty. *J Interven Cardiol* 1992;5:323-330.
 29. Veldkamp, RF, Bengtson JR, Sawchak ST, Pope JE, Mertens JR, Mortara DW, Califf RM, Krucoff MW: Evolution of an automated ST-Segment analysis program for Dynamic real-time, noninvasive detection of coronary occlusion and reperfusion. *J Electrocard* 1992; 25(suppl):182-187.
 30. Krucoff MW, Croll MA, Pope JE, Pieper KS, Kanani PM, Granger CB, Veldkamp RF, Wagner BL, Sawchak ST, Califf RM: Continuously updated 12-lead ST-segment recovery analysis for myocardial infarct artery patency assessment and its correlation with multiple simultaneous early angiographic observations. *Am J Cardiol* 1993;71:145-151.
 31. Tenaglia AN, Zidar JP, Jackman JD, Jr., Fortin DF, Krucoff MW, Tcheng JE, Phillips HR, Stack RS. Treatment of long coronary artery narrowings with long angioplasty balloon catheters. *Am J Cardiol* 1993;71(15):1274-7.

32. Veldkamp RF, Pope JE, Sawchak, ST, Wagner GS, Califf RM, Krucoff MW. ST-segment recovery as an endpoint in acute myocardial infarction trials. Past, present and future. *J Electrocard* 1993;26(suppl):256-61.
33. Incorvati RL, Tauberg SG, Pecora MJ, Macherey RS, Krucoff MW, Dianzumba SB, Donohue BC. Clinical applications of coronary sinus retroperfusion during high risk PTCA.. *J Am Col Cardiol* 1993;22:127-34.
34. Krucoff MW, Croll MA, Pope JE, Granger CB, O'Connor CM, Sigmon KN, Wagner BL, Ryan JA, Lee KL, Kereiakes DJ, Samaha JK, Worley SJ, Ellis SG, Wall TC, Topol EJ, Califf RM, and TAMI 7 Study Group. Continuous 12-lead ST-segment recovery analysis in the TAMI 7 study. Performance of a noninvasive method for real-time detection of failed myocardial reperfusion. *Circulation* 1993;88:437-446.
35. Veldkamp RF, Green CL, Wilkins ML, Pope JE, Sawchak, ST, Ryan JA, Califf RM, Wagner GS, Krucoff MW. Comparison of continuous ST-segment recovery analysis with methods using static electrocardiograms for noninvasive patency assessment during acute myocardial infarction. *Am J Cardiol* 1994;73(15):1069-74.
36. Krucoff MW, Loeffler KA, Haisty, Jr. WK, Pope JE, Sawchak, ST, Wagner, GS, Pahlm O. Comparison between standard and monitoring-compatible torso limb lead placement of ST-segment measurements at rest and during active myocardial ischemia. *Am J Cardiol* 1994;74:997-1007.
37. Krucoff MW, Green CL, Langer A, Klootwijk LJP, Trollinger KM, Sawchak ST, Wilderman NM, Veldkamp RF, Pope JE, Simoons ML, Granger CB, Armstrong PW. Global utilization of streptokinase and tPA for occluded arteries (GUSTO) ECG-monitoring substudy: study design and technical considerations. *J Electrocard* 1993;26(suppl):249-255.
38. Shah A, Green CL, Trollinger KM, Wilderman NM, Pope JE, Califf RM, Wagner GS, Krucoff MW. Reassessing the clinical significance of ST-segment depression that occurs concomitantly with the ST-segment elevation during acute myocardial infarction with the use of continuous ST-segment analysis. *J Electrocard* 1994;27(suppl):256-9.
39. Krucoff MW, Veldkamp RF, Kanani PM, Ryan JA, Sawchak ST, Wilderman NM, Bengtson JR, Pope JE, Sketch M, Phillips HR, "The impact of autoperfusion on quantitative electrocardiographic parameters of ischemia severity, extent, and "burden" during salvage of elective coronary angioplasty". *J Invas Cardiol* 1994;6:234-40.
40. Krucoff MW, Green CL, Harrell FE, Simoons ML, Wilderman NM, Trollinger KM, Sawchak ST, Pope JE, Shah A, Granger CB, Califf RM, Lee KL: "From signal/noise to information content/noise: Reconsidering the statistical analysis of continuous ST-segment data streams with gaps: potential optimization of application-specific information content using left, right, and interval censoring". *J Electrocard* 1994;27(suppl):233-237.
41. Ellis SG, Lincoff AM, George BS, Kereiakes DJ, Ohman EM, Krucoff MW, Califf RM, Topol EJ. Randomized evaluation of coronary angioplasty for early TIMI 2 flow after thrombolytic therapy for the treatment of acute myocardial infarction: a new look at an old study. The thrombolysis and angioplasty in myocardial infarction (TAMI) study group. *Coronary Artery Disease* 1994;5(7):611-5.
42. Anderson ST, Pahlm O, Selvester RH, Bailey JJ, Berson AS, Barold SS, Clemmensen P, Dower GE, Elko PP, Krucoff MW, Laks M, Marriott HJL, Macfarlane PW, Okamoto N, Page RL, Palmeri ST, Rautaharju P, Tolan G, White R, White T, Wagner GS. "Panoramic display of the orderly sequenced 12-lead ECG". *J Electrocard* 1994;27:347-352.
43. Granger CB, Miller JM, Bovill EG, Gruber A, Tracy RP, Krucoff MW, Green C, Berrios E, Harrington RA, Ohman EM. Rebound increase in thrombin generation and activity after cessation of intravenous heparin in patients with acute coronary syndromes. *Circulation* 1995;91(7):1929-35.
44. Talley JD, Krucoff MW. Diagnosis and Treatment of Acute Coronary Ischemic Syndromes: An Update for 1995. . *The J of the Ark Med Society* 1995;92(3):129-31.
45. Lee JG, Krucoff MW, Brazer SR. Periprocedural myocardial ischemia in patients with severe symptomatic coronary artery disease undergoing endoscopy: prevalence and risk factors. *Am J Med* 1995;99(3):270-5.
46. Langer A, Krucoff MW, Klootwijk P, Veldkamp R, Simoons M, Granger C, Califf RM, Armstrong PW, "Noninvasive assessment of speed and stability of infarct-related artery reperfusion: results of the GUSTO ST-segment monitoring study. *J Am Col Cardiol* 1995;25:1552-1557.
47. Newby KH, Pisano E, Krucoff MW, Green C, Natale A. Incidence and clinical relevance of occurrence of bundle-branch block

in patients treated with thrombolytic therapy. *Circulation* 1996;94(10):2424-8.

48. Ohman EM, Kleinman NS, Gacioch G, Worley SJ, Navetta FI, Talley JD, Anderson HV, Ellis ST, Cohen M, Sprigg D, Miller M, Kereiakes D, Yakubov S, Kitt MM, Sigmon KN, Califf RM, Krucoff MW, Topol EJ. Combined accelerated tissue-plasminogen activator and platelet glycoprotein IIb/IIIa integrin receptor blockade with integrilin in acute myocardial infarction: results of a randomized, placebo-controlled, dose-ranging trial. *Circulation* 1997;95(4):846-854.
49. Shah A, Wagner GS, Green CL, Crater SW, Sawchak ST, Wildermann NW, Mark DB, Waugh RA and Krucoff MW. Electrographic differentiation of the ST-Segment Depression of Acute Myocardial Injury Due to the Left Circumflex Artery Occlusion From That of Myocardial Ischemia of Non-Occlusive Etiologies. *Am J Cardiol*. 1997;80:512-13.
50. Shah A, Wagner GS, Califf RM, Boineau RE, Green CL, Wildermann NW, Trollinger KM, Pope JE and Krucoff MW. Comparative Prognostic Significance Versus Independent Resolution of ST-Segment Depression Relative to ST-Segment Elevation During Acute Myocardial Infarction. *J Am Coll of Cardiol*, 1997;30:1478-1483.
51. Fisher SD, Loeffler AK, Green CL, Wildermann NM, Pope JE, Krucoff MW. Device Implementation, Validation, Application (DIVA) assessment of two continuous 12-lead ECG monitors during PTCA: description of the validation method and implications for clinical trials. *J of Electrocardiol*, 1997, p223-227.
52. BARI Investigators. Influence of diabetes on 5-year mortality and morbidity in a randomized trial comparing CABG and PTCA in patients with multivessel disease. *Circulation* 1997;96(No6):1761-1769
53. Tomassoni G, Pisano E, Gardner L, Krucoff MW, Natale A. QT prolongation and dispersion in myocardial ischemia and infarction. *J Electrocard* 1998;30(suppl):204-7.
54. Langer A, Krucoff MW, Klootwijk P, Simoons ML Granger CB, Barr A, Califf RM, Armstrong PW. Prognostic significance of ST segment shift early after resolution of ST elevation in patients with myocardial infarction treated with thrombolytic therapy: The GUSTO-I ST segment monitoring substudy. *J Am Coll of Cardiol* 1998;26(4):783-9.
55. Corbalan R, Prieto JC, Chavez E, Nazzari C, Cumsille F, Krucoff MW. Bedside markers of coronary artery patency and short-term prognosis of patients with acute myocardial infarction and thrombolysis. *Am Heart J* 1999;138(3 Pt 1):533-539.
56. Crater SW, Taylor CA, Maas AC, Loeffler AK, Pope JE, Drew BJ, Krucoff MW. Real-time application of continuous 12-lead ST-segment monitoring: 3 case studies. *Critical Care Nurse* 2000;20(No.2):93-99.
57. Tanguay JF, Cantor WJ, Krucoff MW, Muhlestein B, Barsness GW, Zidar JP, Sketch MH, Tchong JE, Phillips HR, Stack RS, Kaplan AV, Ohman EM. Local delivery of heparin post-PTCA: A multicenter randomized pilot study. *Catheterization and Cardiovascular Diagnosis* 2000;49:461-467.
58. Gibler WB, Hoekstra JW, Weaver D, Krucoff MW, Hallstrom AP, Jackson RE, Sayre MR, Christenson J, Higgins GL, Innes G, Harper RJ, Young GP, Every NR. A randomized trial of the effects of early cardiac serum marker availability on reperfusion therapy in patients with acute myocardial infarction: the serial markers, acute myocardial infarction and rapid treatment trial (SMARTT). *J Am Coll of Cardiol* 2000; 36(5):1500-1506.
59. Shah A, Wagner GS, Granger CB, O'Connor CM, Green CL, Trollinger KM, Califf RM, Krucoff MW. Prognostic implications of TIMI flow grade in the infarct related artery compared with continuous 12 lead ST segment resolution analysis: Re-examining the "gold standard" for myocardial reperfusion assessment. *J Am Coll of Cardiol* 2000;35:3:655-672.
60. Lubarsky DA, Fisher SD, Slaughter TF, Green CL, Lineberger CK, Astles JR, Greenberg CS, Inge III WW, Krucoff MW. Myocardial ischemia correlates with reduced fibrinolytic activity following peripheral vascular surgery. *J Clin Anes* 12:136-41, 2000.
61. Roe MT, Ohman EM, Maas AC, Christenson RH, Mahaffey KW, Granger CB, Harrington RA, Califf RM, Krucoff MW. Shifting the open-artery hypothesis downstream: The quest for optimal reperfusion. *J Am Coll of Cardiol* 2001;37(No.1):9-18.
62. Krucoff MW. Cyclic coronary flow: defining preinfarction angina at the crossroads of unstable angina and myocardial infarction. *Heart Attack: The Public Health Challenge for the New Millennium* 2001:(spring)60-64.
63. Morrison DA, Sethi G, Sacks J, Henderson W, Grover F, Sedlis S, Esposito R, Ramanathan K, Weiman D, J Talley, Saucedo J, Antakli T, Paramesh V, Pett S, Vernon S, Birjiniuk V, Welt F, Krucoff M, Wolfe W, Lucke JC, Mediratta S, Booth D, Barbieri C,

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- Lewis D. Percutaneous coronary intervention versus coronary artery bypass graft surgery for patients with medically refractory myocardial ischemia and risk factors for adverse outcomes with bypass: A multicenter, randomized trial. *J Am Coll of Cardiol* 2001;38(No. 1)143-149.
64. Corbalan R, Larrain G, Nazzari C, Castro PF, Acevedo M, Dominguez JM, Bellolio F, Krucoff MW. Association of non-invasive markers of coronary artery reperfusion to assess microvascular obstruction in patients with acute myocardial infarction treated with primary angioplasty. *Am J Cardiol* 2001;88:342-346.
65. Krucoff MW, Crater SW, Green CL, et al. Integrative noetic therapies as adjuncts to percutaneous intervention during unstable coronary syndromes: Monitoring and Actualization of Noetic Training (MANTRA) feasibility pilot. *Am Heart J*. 2001;142:760-769
66. Morrison DA, Sethi G, Sacks J, Henderson W, Grover F, Sedlis S, Esposito R, Ramanathan KB, Weiman D, Talley JD, Saucedo J, Antakli T, Paramesh V, Pett S, Vernon S, Birjiniuk V, Welt F, Krucoff M, Wolfe W, Lucke JC, Mediratta S, Booth D, Barbieri C, Lewis D. Percutaneous coronary intervention versus coronary bypass graft surgery for patients with medically refractory myocardial ischemia and risk factors for adverse outcomes with bypass. *J Am Coll of Cardiol* 2002;39(No. 2)266-273.
67. Wong CK, French JK, Krucoff MW, Gao W, Alyward PE, White HD. Slowed ST-segment recovery despite early infarct artery patency in patients with Q waves at presentation of a first acute myocardial infarction: Implications of initial Q waves on myocyte reperfusion. *Eur Heart J* 2002; 23:1449-1455.
68. Theres H, Stadler RW, Stylos L, Glos M, Leuthold T, Baumann G, Nelson SD, Krucoff MW. Comparison of electrocardiogram and intrathoracic electrogram signals for detection of ischemic ST segment changes during normal sinus and ventricular paced rhythms. *J Cardiovasc Electrophysiol* 2002;13:990-995.
69. Krucoff MW, Hampton D, Hubelbank M, Field DQ, Stadler RW, Mortara DM. Ischemia monitoring, state of the art. *J Electrocard* 2002; 35(suppl):207-237
70. Dusek JA, Astin JA, Hibberd PL, Krucoff MW. Healing prayer outcomes studies: consensus recommendations. *Alt Therapies* 2003; 9, No. 3, (suppl): A44-A53.
71. Jurlander B, Holmvang L, Galatius S, Creighton V, Johanson P, Krucoff MW, Grande P, Clemmensen P, Vaught C, Wagner GS: The mirror-like serial relationship of electrocardiographic and biochemical indices for the detection of reperfusion and the prediction of salvage in patients with acute myocardial infarction. *Am Heart J*, September 2003, in press.
72. Vogel H, Bolling S, Costello R, Guarneri E, Krucoff M, Longhurst J, Olshansky B, Pelletier K, Vogel R. American College of Cardiology Clinical Expert Consensus Document on the Integration of Complementary Medicine Into Cardiovascular Medicine. *J Am Coll Cardiol*, in press, 2003.
73. Gibson CM, Karha J, Giugliano RP, Roe MT, Murphy SA, Harrington RA, Green CL, Schweiger MJ, Miklin JS, Baran KW, Palmeri S, Braunwald E, Krucoff MW. Association of the Timing of ST-Segment Resolution with TIMI Myocardial Perfusion Grade in Acute Myocardial Infarction. *Circulation* in press 2003.
74. Engelen DJ, Gressin V, Krucoff MW, Theuns DA, Green C, Cheriex E, Maison-Blanche P, Dassen W, Wellens H, Gorgels AP. Usefulness of Frequent Arrhythmias after Epicardial Recanalization in Anterior Wall Acute Myocardial Infarction as a Marker of Cellular Injury Leading to Poor Recovery of Left Ventricular Function ? *Am J Cardiol*, in press 2003
75. Grunberg GE, Crater SW, Green CL, Seskevich J, Lane JD, Koenig HG, Bashore TM, Morris KG, Mark DB, Krucoff MW. Correlations Between Pre-procedure Mood and Clinical Outcome in Patients Undergoing Coronary Angioplasty in press *Cardiology-In-Review*, July 2003
76. Green CL, Brownie C, Boos DD, Lu JC, Krucoff MW. Maximum likelihood estimation of time to first event when data gaps and multiple events are possible. *Biometrics* June 2000; submitted.
77. Johanson P, Wagner G, Green C, Dellborg M, Boam A, Roe M, Gray G, Zuckerman B, Langer A, Krucoff M. ST-segment recovery as a marker of efficacy in treatment of ST-elevation myocardial infarction. *Circulation*, invited paper, submitted.
78. Johanson P, Goodman S, Dellborg M, Yuling F, Armstrong P, Krucoff M, Wallentin L, Wagner G. A Dynamic model forecasting myocardial infarct size before, during and after reperfusion therapy – An ASSENT-2 ECG/VCG substudy, *Circulation* submitted.

79. Krucoff M, Johanson P, Crater S, Dellborg M. The Clinical Utility of Serial & Continuous ST-segment Recovery in Patients with Acute ST Elevation Myocardial Infarction: Assessing the Dynamics of Epicardial and Myocardial Reperfusion. Circulation, invited paper, submitted.
80. Gibson CM, Jennings LK, Lorenz DP, Murphy SA, Giugliano, RP., Harrington, RA, Cholera, S, Krishnan, R, Krucoff, MW, Califf, RM, Braunwald, E, for the INTEGRITI Study Group: Association Between Platelet Receptor Occupancy Following Eptifibatide (Integrilin) Therapy with Patency, Tissue Level Perfusion and ST Segment Resolution in ST Segment Elevation Myocardial Infarction: An INTEGRITI Substudy. Circulation submitted.
81. Kandzar DE, Chu A, Brodie BR, Stuckey TA, Hermiller JB, Vetrovec GW, Hannan KL, Krucoff MW, Christenson RH, Gibbons RJ, Sigmon KN, Garg J, Hasselblad V, Collins K, Harrington RA, Berger PB, Chronos NA, Hochman JS, Califf RM, Am J Cardiol. Feasibility of Endovascular as an Adjunct to Primary PCI: Results of the LOWTEMP Pilot Study, in press.

1. Non-refereed publications: (*Non-refereed publications are those that frequently solicit articles and do not routinely use a system of critical review prior to publication.*)

1. Kent KM, Krucoff MW, Ewels C, Satler LF. Transluminal coronary angioplasty in asymptomatic or mildly symptomatic patients. In Rackley, C.E. (ed). Recognition of silent ischemia, proceedings of a symposium, Washington, D.C. *Ciba-Geigy Summit* 1985:45-54, 1985.
2. Krucoff MW, Green CE, Satler LF, Pallas RS, Miller FC, Kent KM, Fletcher RD, Rackley CE. "Detection of coronary artery patency using continuous ST segment monitoring", in Computerized Interpretation of the Electrocardiogram, *Engineering Foundation publ*, 1985:27-28.
3. Krucoff MW: "Clinical challenges to computer assisted ST segment analysis", in Computerized Interpretation of the Electrocardiogram XI, *Engineering Foundation publ* 1986:85-88.
4. Krucoff MW, Green CE, Satler LF, Kent, KM, Rackley CE. Electrocardiographic monitoring of coronary artery patency following streptokinase infusion. *Cardiology Board Review* 1986;3:#12:37-47.
5. Kent KM, Ewels CJ, Krucoff MW. "Non-invasive assessment of patients following PTCA". *Cardiology Clinics*, 1988:199-208.
6. Krucoff MW, Bottner RK, Kent KM, Rackley CE. "Acute myocardial infarction: Pitfalls in diagnosis and treatment". *Hospital Medicine* 1988:54-70.
7. Krucoff MW: Comprehensive ischemia monitoring in unstable coronary syndromes. *Coronary Acute Care* 1990;1:2-10.
8. Schlitz M, Lewis N: Subtle realms of healing. *IONS* 2001;55: 30-37.

3. Chapters in books:

1. Rackley CE, Satler LF, Krucoff MW, Pallas RS, Pearle DL, Del Negro AA, Kent KM. Future directions for the diagnosis and treatment of acute myocardial infarction. In: Acute Myocardial Infarction: Emerging Concepts of Pathogenesis and Treatment, in press. Praeger publ, 1986.
2. Krucoff MW, Pope JE, Bottner RK, Adams IM, Wagner GS, and Kent KM. Dedicated ST-segment monitoring in the CCU after successful coronary angioplasty: incidence and prognosis of silent and symptomatic ischemia in: Silent Ischemia: Current Concepts and Management, V. Armin, Maseri Ed. Steinkopff Verlag Darmstadt publ, 1987.
3. Krucoff MW, Satler LF, Green CE, Rackley CE, Kent KM. "ST segment changes during acute myocardial infarction", in Acute Coronary Care 1987, R.M. Califf and G.S. Wagner (eds.), Martinus Nijhoff Publishing, Boston, 1987:125-164.
4. Krucoff MW, Jackson YR, Stark KS, Kent KM. "Electrocardiographic patterns of impending coronary closure independent of unstable anginal symptoms. In Predisposing Conditions for Acute Ischemic Syndromes, von Arnim T., Maseri A. eds., Springer-Verlag, Darmstadt, 1989.
5. Krucoff MW, Crater SW, O'Connor CM, Califf RM. "Patient management following percutaneous Transluminal Coronary revascularization" Interventional Cardiovascular Medicine: Principles and Practice, Roubin G, Califf R et al eds. Churchill Livingstone, 1993:643-658.
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7. Krucoff MW. Seamless physiologic monitoring: from intuition to execution. Digital Cardiac Imaging in the 21st Century: A Primer. The Cardiac and Vascular Information Working Group, 1997:98-99.
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c. Editorials, position, and background papers

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3. Krucoff MW, Crater SW: Dose response and the effects of distant prayer on health outcomes: The state of the research. *The Integrative Medicine Consult*, May 2002; Vol. 4, Number 5, 56-58.

Consultant appointments: (Include US government, state, private organizations, etc.)

- SCOR consultant on ischemia monitoring: Cleveland Clinic Foundation
- Scientific consultant, engineering & design, clinical applications & strategic planning: Abbott Pharmaceutical
- Scientific consultant, engineering & design, clinical applications & strategic planning: Alpha Therapeutic/Green Cross
- Scientific consultant, engineering & design, clinical applications & strategic planning, Angelmed Systems
- Scientific consultant, engineering & design, clinical applications & strategic planning: Aspect Medical
- Scientific consultant, engineering & design, clinical applications & strategic planning: B-Braun Medical
- Scientific consultant, engineering & design, clinical applications & strategic planning: Biogen Inc.
- Scientific consultant, engineering & design, clinical applications & strategic planning: Boston Scientific/Scimed/Heart Technology/EPI
- Scientific consultant, engineering & design, clinical applications & strategic planning, Conor Medsystems
- Scientific consultant, engineering & design, clinical applications & strategic planning: Cordis-Johnson & Johnson
- Scientific consultant, engineering & design, clinical applications & strategic planning: Eli Lilly
- Scientific consultant, engineering & design, clinical applications & strategic planning, Guidant Corporation
- Scientific consultant, engineering & design, clinical applications & strategic planning, InfraRedex
- Scientific consultant, engineering & design, clinical applications & strategic planning: Hewlett-Packard/Agilent/Philips
- Scientific consultant, engineering & design, clinical applications & strategic planning, Jomed
- Scientific consultant, engineering & design, clinical applications & strategic planning: Masimo, Inc.
- Scientific consultant, engineering & design, clinical applications & strategic planning: Medifacts, Inc., Rockville
- Scientific consultant, engineering & design, clinical applications & strategic planning: Medtronic Interventional Vascular

- Scientific consultant, engineering & design, clinical applications & strategic planning: Medtronic Rhythm Management
- Scientific consultant, engineering & design, clinical applications & strategic planning: Medavance
- Scientific consultant, engineering & design, clinical applications & strategic planning: Marquette Electronics/GEMS
- Scientific consultant, engineering & design, clinical applications & strategic planning: Miravant
- Scientific consultant, engineering & design, clinical applications & strategic planning: Mortara Instrument
- Scientific consultant, engineering & design, clinical applications & strategic planning: Ortivus Medical
- Scientific consultant, engineering & design, clinical applications & strategic planning: Per-Q-Surg/Medtronic Vascular
- Scientific consultant, engineering & design, clinical applications & strategic planning: Physio-Control Corporation/Medtronic
- Scientific consultant, engineering & design, clinical applications & strategic planning: Quinton Medical
- Scientific consultant, engineering & design, clinical applications & strategic planning: Spacelabs/Burdick
- Scientific consultant, engineering & design, clinical applications & strategic planning: Stewart Medical
- Scientific consultant, engineering & design, clinical applications & strategic planning: Topspin
- Scientific consultant, engineering & design, clinical applications & strategic planning: Vivometrics
- Scientific consultant, Circulatory Systems Devices Panel, Center for Devices and Radiological Health, Food and Drug Administration, Rockville, MD.
- Scientific/medical consultant, Data Safety Monitoring Board, Celeris protocol CPSP9901, Rockville, MD.
- Review Panel Chair, R01-AT-704-1, National Center for Complementary and Alternative Medicine, National Institute of Health

Professional awards and special recognitions: N/A

Organizations and participation: (*Offices held, committee assignments, etc.*)

American College of Cardiology-National Electronics Manufacturers of America (ACC-NEMA) Digital Communications (DICOM) Standards Committee
 American Society for Testing and Materials Interventional Cardiology Task Group
 Federal Cardiology Workgroup
 Clinical Trials Review Committee Consultant, NHLBI-NIH
 Fellow, American College of Cardiology
 Fellow, American College of Chest Physicians
 American Heart Association, Council on Coronary Thrombosis
 American College of Chest Physicians, Council on Critical Care
 Task Force on Regulatory Harmonization, U.S.-Israel Science & Technology Commission, Department of Commerce, U.S. Federal Government
 Task Force on Telemedicine Technology, U.S.-Israel Science & Technology Commission, Department of Commerce, U.S. Federal Government
 Academic-Industry Relations Working Group, Governor's International Commission, State of North Carolina
 Scientific Program Committee, Computers in Cardiology
 Project Director, The Heart Knows No Borders Coalition
 Executive Committee, VA-385 High Risk Revascularization Study, VA Cooperative Studies Group
 Executive Committee, Clinical Evaluation, Contract & Purchasing Workgroup, VA Cooperative Studies Group
 Associate Faculty Scholar in the Duke Institute on Care at the End of Life, Duke University Divinity School
 The Council for Healing Research Advisory Group

Board of Directors:

- Governor's International Commission, State of North Carolina
- Treasurer, International Society for Computerized Electrocardiography
- Sri Satya Sai Institute of Higher Medical Sciences, Puttaparti, India

Medical Advisory Boards, Scientific Advisory Board:

- AngelMed
- Vivometrics
- InfraRedex
- Topspin
- Rhine Research Center
- Volcano Therapeutics
- LifeSentry Systems, Inc.

Steering Committees:

- Mitsubishi Pharma MCC135 in AMI
- BARRICADE

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- EMERALD
 - ENDEAVOR

Editorial Boards:

- Cardiovascular Radiation Medicine
- Journal of Electrocardiology
- Past Editor In Chief, Alternative Therapies in Health & Medicine

Teaching responsibilities including continuing education:

Teaching responsibilities consist of clinically based teaching and CME sponsored lectures. Clinical teaching of PA students, medical students and house officers training in internal medicine is conducted as the attending for the Cardiology Consult Service and as the attending in the Coronary Care Unit, both at the Durham VA Medical Center. Clinical teaching of cardiology fellows is conducted as the attending for the Coronary Care Unit and as the attending and director of the Cardiovascular Laboratory, both at the Durham VA Medical Center, as well as the attending in the diagnostic and the interventional cardiac catheterization laboratories at the Duke Medical Center. CME sponsored lectures include delivery of Medical Grand Rounds, Cardiology Research Conference and Heart Center Conferences here at Duke. In addition, participation as faculty in CME sponsored symposia and invited CME sponsored Grand Rounds or similar lectureships on acute coronary syndromes, high risk coronary revascularization, chest pain evaluation and other related topics, at other medical centers (see attachment) are a regular component of such teaching responsibilities.

Areas of research interest (*basic and applied*) - list:

Ischemia Monitoring:

- acute/unstable coronary syndromes: early detection; risk stratification; noninvasive detection of reperfusion; quantification of new drug/device effects (proprietary information deleted)
- peri-procedural ischemia: detection, risk stratification and effects of therapy in peri-operative, pre-/post-dialysis; pre-post endoscopy patients with coronary artery disease
- new device development: from new theoretical avenues of ECG signal processing to practical applications in commercial devices, testing record-playback fidelity of new ECG monitoring architectures' implementation, validation & clinical application capabilities

Percutaneous Coronary Revascularization:

1. "high risk" coronary revascularization: acute & long term outcomes, cost effectiveness of percutaneous revascularization strategies in patients with multivessel or class C coronary stenoses, and/or severely impaired left ventricular function, and/or acute/unstable clinical presentations
2. new device assessment: design & application of new guidewire, guide catheter, balloon, stent, drug eluting stent, atherectomy, distal protection, hypothermia, drug delivery systems, devices and adjunctive drug therapies for coronary revascularization

CAM Therapies

- Adjunctive applications to coronary care
- New paradigms of data structure in CAM Research
- Energy, intentionality, spirituality and healing in high tech interventional cardiovascular applications

Clinical activity - type of practice and estimate of time commitment:

Type of Practice:

50% Clinical Care
50% Clinical Research

Clinical Activity Breakdown:

85% Invasive Cardiology Practice
12% CCU and Cardiology Consults Attending
3% Heart Station Support (Holter, ECGs, stress tests)

Participation in academic and administrative activities of the University and Medical Center:

Director, Cardiovascular Laboratories, Durham VA Medical Center
Acting Chief, Cardiology Division, Durham VA Medical Center when Dr. Morris in absentia
Director, eECG Core Laboratory, Duke Clinical Research Institute
Director, Interventional Devices Clinical Trials, DCRI
Director, The Heart Knows No Borders Project
Director, The MANTRA Study Project

Signature of Chairman

Date